

GE1RS-B

SWEEP GENERATOR (1 MHz to 1 GHz)

1. GENERAL. This procurement requires a sweep/signal generator capable of generating signals over the frequency range of 1 MHz to 1 GHz.

2. CLASSIFICATION. The sweep/signal generator described herein shall meet the requirements of MIL-T-28800, Type III, Class 5, Style E, Color R for Navy shipboard, submarine, and shore applications with the following exceptions:

- a. The relative humidity requirement is limited to 95% noncondensating.
- b. The operating and nonoperating altitude requirements are not invoked.
- c. The electromagnetic interference requirements of MIL-T-28800 are limited to CE01, CE03, CS01, CS02 (0.05 to 100 MHz), CS06, RE01 (back panel search excluded), RE02 (14 kHz to 1 GHz), and RS03.
- d. The warm-up time is extended to one hour.

3. OPERATIONAL REQUIREMENTS. The equipment shall be capable of generating signals within the parameters and accuracies specified herein.

3.1 Frequency characteristics.

3.1.1 Frequency range. At least 1 MHz to 1 GHz.

3.1.2 Frequency drift (CW). Less than 100 kHz/5 minutes after one hour warm-up at 25°C $\pm 5^{\circ}\text{C}$.

3.1.3 Frequency accuracy. At least ± 10 MHz.

3.1.4 Spectral purity (equal to or better than the limits specified below).

3.1.4.1 Harmonics. -30 dBc.

3.1.4.2 Nonharmonics. -30 dBc.

3.1.4.3 Residual FM. Less than 20 kHz p-p.

3.2 Output characteristics.

3.2.1 Range. Continuously variable from at least +8 to -80 dBm.

3.2.2 Attenuator accuracy. ± 0.5 dB to 500 MHz; ± 1.0 dB to 1 GHz.

3.2.3 Flatness. At least ± 0.25 dB, 1 MHz to 1 GHz.

3.2.4 Impedance/Connector. 50 Ω ; type BNC female.

3.3 Sweep characteristics.

3.3.1 Sweep time. Continuously variable from 10 ms to 100s.

3.3.2 Sweep trigger modes. Recurring, single sweep, manual and line lock

3.3.3 Sweep width. 200 kHz to 1 GHz.

3.3.4 Markers.

3.3.4.1 Steps. At least 1, 10, 50 and 100 MHz.

3.3.4.2 Accuracy. At least 0.005% of specified frequency.

3.3.4.3 Amplitude. Continuously variable from 1 mV to 1 V p-p.

3.3.4.4 Width. Variable in at least 4 steps from 15 to 400 kHz.

4. GENERAL REQUIREMENTS.

4.1 Power. 115/230 Vac $\pm 10\%$, single phase, 50 to 400 Hz, 20W maximum.

4.2 Dimensions. The total volume of the unit shall not exceed 10,734 cm³ (655 in³).

4.3 Weight. The total weight of the unit shall not exceed 9.1 kg (20 lbs).

4.4 Calibration interval. The calibration interval shall be 12 months minimum. The equipment shall be within all accuracy requirements specified herein, with a 72% or greater confidence factor following a calibration interval of 12 months.